United States Environmental Protection Agency

U.S. Environmental Protection Agency (EPA)

Groveland Wells No. 1 & 2 Superfund Site

EPA Community Involvement | January 2010

Groundwater Plume Continues to Shrink New Contamination Extraction System Starts on Valley Property

Groundwater Extraction & Treatment Progress

Since the US Environmental Protection Agency (EPA) began groundwater extraction and treatment in May of 2000, there has been a continual decrease in the levels and extent of contaminated groundwater in both the overburden (shallow) and bedrock (deep) aquifer. TCE contaminated groundwater is extracted through both shallow and deep wells then pumped to the groundwater treatment plant where the TCE is destroyed by ultraviolet lamps. The clean water is discharged back into the aquifer via Mill Pond. As of September 30, 2009, the groundwater treatment plant has extracted and treated over four million gallons of contaminated groundwater and has removed approximately 1,130 pounds of contamination. EPA will continue to fund, operate and maintain the groundwater treatment system until 2011. Afterward, the Massachusetts Department of Environmental Protection (MassDEP) will assume the responsibility for operating the treatment plant until the remaining risks from the contamination are within an acceptable (protective) range.

Contamination Source Remains

In 1992, EPA issued Valley Manufacturing Products Company (VMPC) a legal order requiring them to design, build and operate a soil vapor extraction system to clean up soil contamination underneath and next to the building. The soil vapor extraction system operated from December 1992 until April 2002 when the company ceased all manufacturing operations and abandoned the property.

Because the soil vapor extraction system was minimally effective, amounts of TCE remain in higher than acceptable levels in the soil at the southern end of the VMPC building. As rainwater and groundwater slowly move through contaminated soil, they too become contaminated. This contaminated water is captured by the groundwater extraction wells and piped underground to the groundwater plant for treatment. Until the remaining contaminated soil around and underneath the VMPC building is addressed, it will continue to be a contamination source.

What Neighbors Can Expect

EPA sub-contractor TerraTherm in early March 2010 will install the Thermally Enhanced Soil Vapor Extraction System. This will involve drilling extraction wells, running power cables to power the electrodes to heat the contamination source, erecting a fence around the treatment area, and setting up air monitoring stations. Work will occur Mondays through Fridays between 7 am and 5 pm. Because of indoor mold issues in the abandoned VMPC building, workers will be wearing respirators and white tyvek protective suits. The TCE soil contamination alone would not require the workers to wear protective equipment. Once the Thermally Enhanced Soil Vapor Extraction System is operating, it will run continuously 24 hours a day, seven days a week without any anticipated unacceptable noises or odors.

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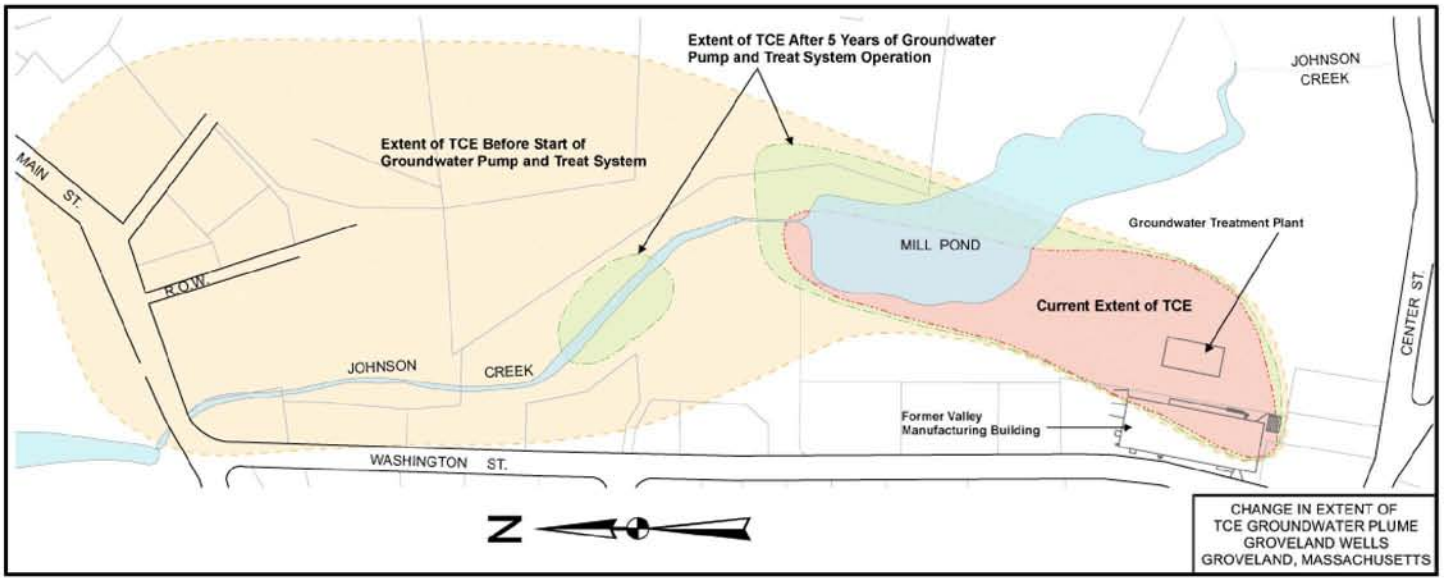


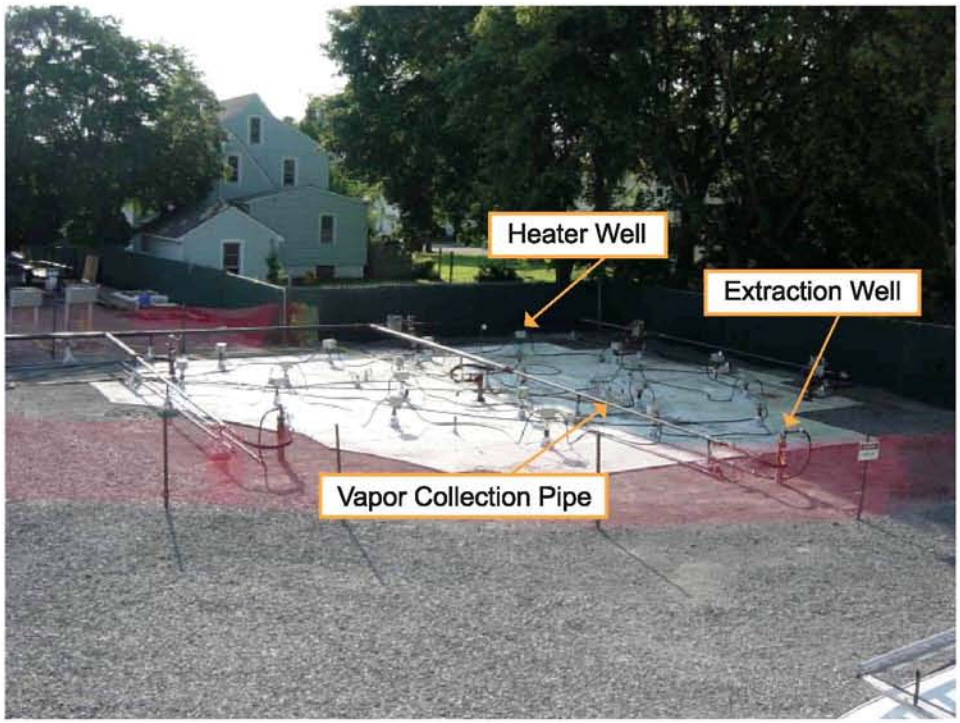
What is Soil Vapor Extraction?

Soil Vapor Extraction or SVE removes harmful chemicals, in the form of vapors, from the soil. Vapors are the gases that form when chemicals evaporate and are known as Volatile Organic Compounds or VOCs. The VOCs are removed from the ground by applying a vacuum to pull the vapors out. Extraction wells are drilled into the soil and a vacuum is attached to the wells and pulls the contaminated air and vapors through the soil and up to the surface where they are collected and safely treated. To speed up and enhance this process, the contaminated soil may be heated, which helps evaporate the chemicals faster and more effectively. This process is called Thermally Enhanced Soil Vapor Extraction.

Reducing the Contamination Source:

Thermally Enhanced Soil Vapor Extraction System

In 2004 and 2006, EPA conducted further investigations and pilot tests to better define the extent of TCE soil contamination and the best means to cleanup its source. These efforts concluded that a soil vapor extraction system enhanced by using heat (Thermally Enhanced Soil Vapor Extraction) operating for approximately one year on the VMPC property should reduce the soil contamination to levels deemed safe for human health and the environment. This enhanced system, by addressing the source of the highest existing soil contamination, will reduce soil contamination, the groundwater contamination plume, and ultimately how many years the groundwater treatment plant operates. During operations the Thermally Enhanced Soil Vapor Extraction System will be monitored and modified to optimize its performance. Air monitoring along the perimeter of the work area will ensure the vapors are being captured and abutting residences are not adversely impacted.



(above)
An example of a Thermally Enhanced Soil Vapor Extraction System from Endicott, NY. Photo courtesy of TerraTherm.

Site Background

The 850-acre Groveland Wells Nos. 1 & 2 Superfund site is located off of Washington Street in Groveland, MA. The site includes the watershed and aquifer which recharge Groveland's Town Well No. 1. Groundwater in this area is mainly contaminated with trichloroethylene (TCE), a man-made chemical which was used at the former Valley Manufacturing Products Company (VMPC) to degrease screws and metal parts. At least 3,000 gallons of waste oil and TCE were released and other accidental spills occurred as a result of VMPC activities. In 1979, the Town shut down two wells with TCE contamination. A new well drawing from a different aquifer was developed. Of the original two wells, EPA treated and reopened Well No. 1 and permanently abandoned the other. The Town of Groveland continues to provide safe drinking water to residents and confirms these safe levels are met through quarterly sampling of the Town wells and by testing groundwater quality at upgradient monitoring wells. EPA's groundwater and treatment facility began operating in 2000. VMPC, in 2002, ceased all manufacturing operations and vacated the former Washington Street facility. In 2007, EPA and VMPC reached a legal settlement requiring VMPC to pay the government 100% of the net sale or net lease proceeds from the property and to implement land use restrictions on the property to prevent contamination exposure until protective levels are attained.

More information,

www.epa.gov/region1/superfund/sites/groveland

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